AMENDMENTS TO THE CLAIMS

Claims 1-110. (Canceled)

111. (New) A metal-polysilicon contact, comprising:

a polysilicon layer provided over a substrate;

a barrier layer formed over said polysilicon layer;

at least one conductive layer formed over said barrier layer; and

at least one layer capable of absorbing oxygen formed adjacent to said conductive layer.

112. (New) The metal-polysilicon contact of claim 111, wherein said at least one layer capable of absorbing oxygen is formed of a material selected from the group consisting of polysilicon, aluminum nitride, titanium nitride, tantalum, and silicon nitride.

113. (New) The metal-polysilicon contact of claim 111, wherein said conductive layer is formed in an opening of an insulating layer, said conductive layer having at least one vertically extending surface in said opening.

114. (New) The metal-polysilicon contact of claim 113, wherein said at least one layer capable of absorbing oxygen contacts said conductive layer at said at least one vertically extended surface.

115. (New) The metal-polysilicon contact of claim 111, wherein said conductive layer comprises a material which is conductive when oxidized.

116. (New) The metal-polysilicon contact of claim 111, wherein said conductive layer comprises a material selected from the group consisting of platinum, platinum oxide, iridium, iridium oxide, ruthenium, ruthenium oxide, rhodium and rhodium oxide.

117. (New) The metal-polysilicon contact of claim 111, wherein said barrier layer is formed of a material selected from the group consisting of refractory metal nitrides, refractory metal carbides, and refractory metal borides.

118. (New) The metal-polysilicon contact of claim 111, wherein said barrier layer has a thickness of approximately 60 to 200 Angstroms.

119. (New) The metal-polysilicon contact of claim 111, wherein said conductive layer has a thickness of approximately 100 to 300 Angstroms.

120. (New) The metal-polysilicon contact of claim 111 further comprising a capacitor formed over and in contact with said conductive layer.

121. (New) The metal-polysilicon contact of claim 120, wherein said high aspect ratio contact has an aspect ratio of at least 25.

122. (New) The metal-polysilicon contact of claim 111, wherein said metal-polysilicon contact is part of a memory circuit.

123. (New) The metal-polysilicon contact of claim 111, wherein said at least one layer capable of absorbing oxygen comprises a plurality of spaced layers capable of absorbing oxygen.

124. (New) The metal-polysilicon contact of claim 123, wherein said plurality of spaced layers capable of absorbing oxygen comprises two layers capable of absorbing oxygen separated by one conductive layer.

125. (New) The metal-polysilicon contact of claim 123, wherein said plurality of layers capable of absorbing oxygen comprises three spaced layers capable of absorbing oxygen separated by two contacting conductive layers.

126. (New) A memory cell, comprising:

a substrate;

a transistor including a gate fabricated on said substrate and including a source/drain region in said substrate disposed adjacent to said gate;

a capacitor including an electrode, said electrode having a surface aligned over said source/drain region; and

a metal-polysilicon structure providing electrical contact between said source/drain region and said surface of said electrode, said metal-polysilicon structure comprising a polysilicon layer formed over said substrate; a barrier layer formed over said polysilicon layer; at least one conductive layer formed over said barrier layer; and at least one layer capable of absorbing oxygen formed adjacent to said conductive layer.

127. (New) The memory cell of claim 126, wherein said at least one layer capable of absorbing oxygen is formed of a material selected from the group consisting of polysilicon, aluminum nitride, titanium nitride, tantalum, and silicon nitride.

128. (New) The memory cell of claim 126, wherein said conductive layer comprises a material selected from the group consisting of platinum, platinum oxide, iridium, iridium oxide, ruthenium, ruthenium oxide, rhodium and rhodium oxide.

129. (New) The memory cell of claim 126, wherein said barrier layer is formed of a material selected from the group consisting of refractory metal nitrides, refractory metal carbides, and refractory metal borides.

130. (New) The memory cell of claim 126 further comprising a capacitor formed over and in contact with said conductive layer.

131. (New) The memory cell of claim 130, wherein said high aspect ratio contact has an aspect ratio of at least 25.

132. (New) The memory cell of claim 126, wherein said metal-polysilicon structure is part of a memory circuit.

133. (New) The memory cell of claim 126, wherein said at least one layer capable of absorbing oxygen comprises a plurality of spaced layers capable of absorbing oxygen.

134. (New) The memory cell of claim 133, wherein said plurality of spaced layers capable of absorbing oxygen comprises two layers capable of absorbing oxygen separated by one conductive layer.

135. (New) The memory cell of claim 133, wherein said plurality of layers capable of absorbing oxygen comprises three spaced layers capable of absorbing oxygen separated by two contacting conductive layers.

136. (New) A metal-polysilicon contact providing electrical connection on a substrate, said metal-polysilicon contact comprising:

a polysilicon layer;

a barrier layer formed over said polysilicon layer;

at least one conductive layer formed over said barrier layer; and

at least one oxygen sink layer formed adjacent to said conductive layer, said oxygen sink layer being at least partially oxidized.

137. (New) The metal-polysilicon contact of claim 136, wherein said at least one oxygen sink layer comprises a plurality of spaced oxygen sink layers.

138. (New) The metal-polysilicon contact of claim 137, wherein said plurality of spaced oxygen sink layers comprises two oxygen sink layers separated by one conductive layer.

139. (New) The metal-polysilicon contact of claim 137, wherein said plurality of oxygen sink layers comprises three spaced oxygen sink layers separated by two contacting conductive layers.

140. (New) The metal-polysilicon contact of claim 137, wherein each of said plurality of oxygen sink layers is at least partially oxidized.

141. (New) The metal-polysilicon contact of claim 136, wherein said at least one oxygen sink layer is formed of a material selected from the group consisting of polysilicon, aluminum nitride, titanium nitride, tantalum, and silicon nitride.

142. (New) The metal-polysilicon contact of claim 136, wherein said conductive layer is formed in an opening of an insulating layer, said conductive layer having at least one vertically extending surface in said opening.

143. (New) The metal-polysilicon contact of claim 142, wherein said at least one oxygen sink layer contacts said conductive layer at said at least one vertically extended surface.

144. (New) The metal-polysilicon contact of claim 136, wherein said conductive layer comprises a material selected from the group consisting of platinum, platinum oxide, iridium, iridium oxide, ruthenium, ruthenium oxide, rhodium and rhodium oxide.

145. (New) The metal-polysilicon contact of claim 136 further comprising a capacitor formed over and in contact with said conductive layer.

146. (New) The metal-polysilicon contact of claim 145, wherein said high aspect ratio contact has an aspect ratio of at least 25.

147. (New) The metal-polysilicon contact of claim 136, wherein said metal-polysilicon contact is part of a memory circuit.

148. (New) A memory cell, comprising:

a substrate;

a transistor including a gate fabricated on said substrate and including a source/drain region in said substrate disposed adjacent to said gate;

a capacitor including an electrode, said electrode having a surface aligned over said source/drain region; and

a metal-polysilicon structure providing electrical contact between said source/drain region and said surface of said electrode, said metal-polysilicon structure comprising a polysilicon layer formed over said substrate; a barrier layer formed over said polysilicon layer; at least one conductive layer formed over said barrier layer; and at least one oxygen sink layer formed adjacent to said conductive layer, said at least one oxygen sink layer being at least partially oxidized.

149. (New) The memory cell of claim 148, wherein said at least one oxygen sink layer comprises a plurality of spaced oxygen sink layers.

150. (New) The memory cell of claim 149, wherein said plurality of spaced oxygen sink layers comprises two oxygen sink layers separated by one conductive layer.

151. (New) The memory cell of claim 149, wherein said plurality of oxygen sink layers comprises three spaced oxygen sink layers separated by two contacting conductive layers.

152. (New) The memory cell of claim 149, wherein each of said plurality of oxygen sink layers is at least partially oxidized.

153. (New) The memory cell of claim 148, wherein said at least one oxygen sink layer is formed of a material selected from the group consisting of polysilicon, aluminum nitride, titanium nitride, tantalum, and silicon nitride.

154. (New) The memory cell of claim 148, wherein said conductive layer comprises a material selected from the group consisting of platinum, platinum oxide, iridium, iridium oxide, ruthenium, ruthenium oxide, rhodium and rhodium oxide.

155. (New) The memory cell of claim 148, wherein said barrier layer is formed of a material selected from the group consisting of refractory metal nitrides, refractory metal carbides, and refractory metal borides.

156. (New) The memory cell of claim 148 further comprising a capacitor formed over and in contact with said conductive layer.

157. (New) A metal-polysilicon contact, comprising:

a polysilicon layer provided over a substrate;

a barrier layer formed over said polysilicon layer;

at least one conductive layer formed over said barrier layer; and

at least one oxygen sink layer formed adjacent to said conductive layer, said at least one oxygen sink layer being capable of absorbing oxygen to slow down an oxygen front from reaching said at least one conductive layer.

158. (New) The metal-polysilicon contact of claim 157, wherein said at least one oxygen sink layer is formed of a material selected from the group consisting of polysilicon, aluminum nitride, titanium nitride, tantalum, and silicon nitride.

159. (New) The metal-polysilicon contact of claim 157, wherein said conductive layer is made of a material which is conductive when oxidized.

160. (New) The metal-polysilicon contact of claim 157, wherein said conductive layer comprises a material selected from the group consisting of platinum, platinum oxide, iridium, iridium oxide, ruthenium, ruthenium oxide, rhodium and rhodium oxide.

161. (New) The metal-polysilicon contact of claim 157, wherein said barrier layer is formed of a material selected from the group consisting of refractory metal nitrides, refractory metal carbides, and refractory metal borides.

162. (New) The metal-polysilicon contact of claim 157 further comprising a capacitor formed over and in contact with said conductive layer.

163. (New) The metal-polysilicon contact of claim 157, wherein said at least one oxygen sink layer comprises a plurality of oxygen sink layers.